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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/098,616	03/18/2002	Satoru Tanaka	PU01-01169	3680

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/098,616

Applicant(s)

TANAKA ET AL.

Examiner

Joshua L Pritchett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 17-26 and 31-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-25 and 32-35 is/are allowed.
- 6) ☒ Claim(s) 1-7, 26 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

This action is in response to Election filed June 18, 2003. Applicant elected Species II (claims 17-25 and 32-35) without traverse.

Drawings

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1-6, 26 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Ito (US 6,320,683).

Regarding claim 1, Ito discloses a hologram recording medium made of a photo refractive crystal of a uniaxial crystal (col. 5 lines 5-7) in a shape of a parallel flat plate (10, Fig. 2) and has a plurality of areas of a refractive index grating corresponding to one portion of a three dimensional light interference pattern of a coherent signal light beam and coherent reference light of a first wavelength modulated in accordance with information data (Fig. 4), wherein each of the areas of the refractive index has a columnar shape and the areas of the refractive index grating are adjacently arranged in parallel with each other (Fig. 4).

Regarding claim 2, Ito discloses wherein the photo refractive crystal is a crystal having a recording sensitivity at the first wavelength that is increased when a gate light beam of a second wavelength is simultaneously irradiated in addition to the reference light and the signal light of the first wavelength (col. 5 lines 30-34).

Regarding claims 3 and 28, Ito discloses wherein the photo refractive crystal has an optical crystal axis approximately parallel or perpendicular to a main surface of the recording medium (col. 3 lines 60-61).

Regarding claim 4, Ito discloses wherein information data of one screen is stored in areas of the refractive index grating (col. 4 lines 51-63).

Regarding claim 5, Ito discloses wherein each of the areas of the refractive index grating of the columnar shape extends approximately perpendicularly to the main surface of the hologram recording medium (Fig. 4; col. 5 lines 7-8).

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Regarding claim 6, Ito discloses wherein each of the areas of the refractive index grating of the columnar shape approximately has a cylindrical shape (Fig. 4).

Regarding claim 26, Ito discloses the invention as claimed and discussed in claim 1. Ito further discloses a reproducing step including converging and passing the recording reference light beam to the main surface of the recording medium and reflecting the recording reference light beam at the beam waist of its vicinity thereof to generate a reproducing reference beam coaxial with the recording reference beam going back to the recording medium to propagate the reproducing reference light beam in an opposite direction into the refractive index grating of the recording medium to generate a phase conjugate wave (col. 6 line 53 – col. 7 line 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Tanaka (US 6,301,028).

Ito teaches the invention as claimed but lacks reference to the diameter of the zeroth-order and primary diffracted lights. Tanaka teaches wherein a maximum inside diameter of the

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areas of the refractive index grating is smaller than the distance between peaks of zeroth-order and primary diffracted lights of a light intensity distribution of the signal light beam (col. 8 lines 20-27; Fig. 4). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Ito invention include the refractive index grating size as taught by Tanaka for the purpose of concentrating the information near the zeroth-order signal.

Allowable Subject Matter

Claims 17-25 and 32-35 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art of record fails to teach or suggest a gate light beam perpendicularly incident to the recording medium together with the recording reference beam. The prior art does teach the gate light beam perpendicularly incident the recording medium, but does not teach a relationship with the reference light beam that could be termed as "together." The broadest reasonable interpretation of the term "together" used in the context of the claim; in the opinion of the examiner means that the two beams (gate and reference) are incident the same surface of the recording medium.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamaji (US 6,414,762) teaches the use of a gate beam intersecting the recording medium at a perpendicular angle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 703-305-7917. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 703-305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JLP



DREW DUNN
SUPERVISORY PATENT EXAMINER